

(19)日本国特許庁(J P)

(12) 公開実用新案公報 (U)

(11)実用新案出願公開番号

実開平5-38852

(43)公開日 平成5年(1993)5月25日

(51)Int.Cl. ⁵	識別記号	庁内整理番号	F I	技術表示箇所
H 0 1 F 37/00	Z	8935-5E		
15/10	L	7129-5E		
17/06	L	7129-5E		
41/06	E	8019-5E		
41/08	F	8019-5E		

審査請求 未請求 請求項の数1(全 2 頁)

(21)出願番号 実開平3-85654

(22)出願日 平成3年(1991)10月21日

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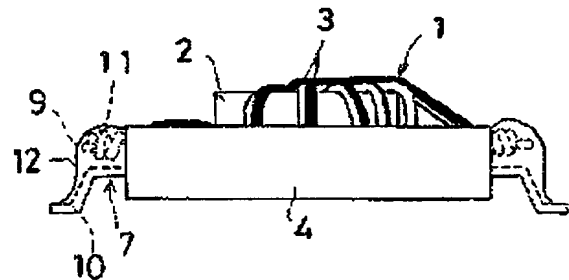
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(54)【考案の名称】 面実装コイル部品

(57)【要約】

【目的】 巻線端末を引っ張りながら基体に設けた外部接続端子に絡めても該端子が折曲することがなく、複数の外部接続端子を並設した場合、端子間隔が変わることがなく、更に外部接続端子の外部接続部の機械的強度が増加した面実装コイル部品を得る。

【構成】 基板4に外部接続端子7の一端近傍を埋め込み、一端部を基板4の上面に突出しその付け根から直角に折り曲げて上面と平行に導出して絡げ部9とし、他端部を基板4の側面から絡げ部9と平行に且つこれより長く導出して外部接続部10とする。基板4上に配置した、磁性コア2に巻線3を巻装したコイル1の巻線端末11を絡げ部9に絡げ、絡げ部9と外部接続部10の付け根を半田12で一体にする。



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【実用新案登録請求の範囲】

【請求項1】 磁性コアに巻線を巻装したコイルを装着する盤体に外部接続端子を設け、該外部接続端子に前記巻線の端末を絡めて成る面実装コイル部品において、前記外部接続端子は、前記盤体の側面から導出された外部接続部と前記盤体から該外部接続部の付け根部分と略平行に導出された巻線端末絡げ部とから成り、該巻線端末絡げ部に前記巻線の端末を絡め、該巻線絡げ部と前記外部接続部の付け根部分とを半田で一体化したこと特徴とする面実装コイル部品。

【図面の簡単な説明】

【図1】 本考案の一実施例の正面図

【図2】 上記実施例の盤体部の斜視図

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* 【図3】 半田付け前の上記実施例の正面図

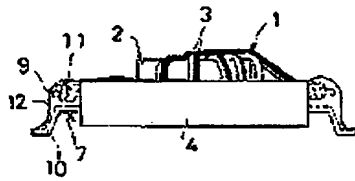
【図4】 本考案の他の実施例の盤体部の斜視図

【図5】 従来の面実装コイル部品の斜視図

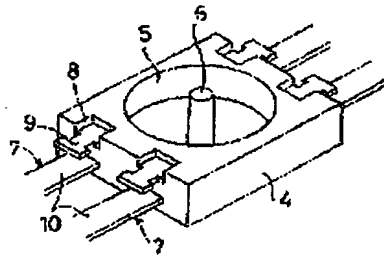
【符号の説明】

- | | |
|-----------------|----------|
| 1 コモンモードチョークコイル | 2 環状磁性コア |
| 3 巻線 | 4 絶縁性盤体 |
| 7 外部接続端子 | 9 巻線端末 |
| 10 絡げ部 | 11 巻線端末 |
| 10 外部接続部 | 11 巻線端末 |
| 12 半田 | |

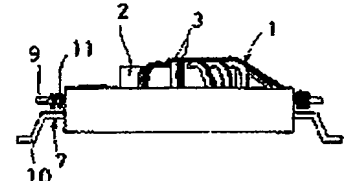
【図1】



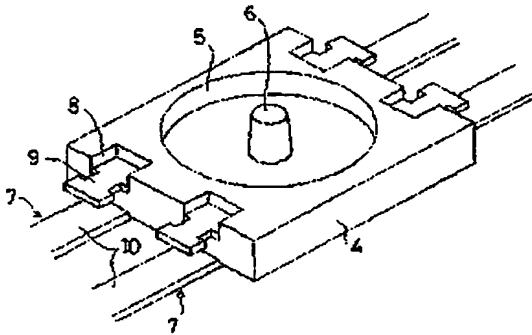
【図2】



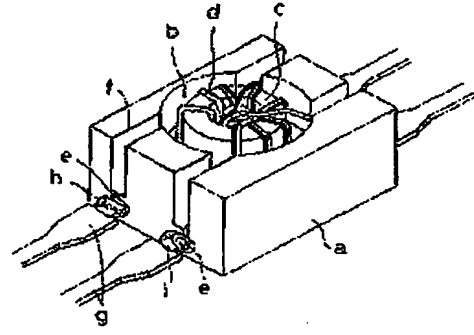
【図3】



【図4】



【図5】



【考案の詳細な説明】

【0001】

【産業上の利用分野】

本考案は、例えばチップ型コモンモードチョークコイルのような面実装コイル部品に関する。

【0002】

【従来の技術】

従来の面実装コイル部品には、例えば図5に示すように、直方体の盤体aの上面に形成された円形の凹部bに、環状磁性コアcに巻線dが巻装されたコイルeを装着し、巻線dの端末eを前記凹部bから側面に開口する溝fに挿通した後、前記側面に植設した外部接続端子gの根元の絡げ部hに端末eを引っ張った状態で絡げ、絡げ部から外部接続端子gの先端までを溶融半田iに浸漬して絡げ部分を半田付けしている。

【0003】

【考案が解決しようとする課題】

従来のコイル部品において、巻線端末を引っ張った状態で外部接続端子gの周りに絡げるので、外部接続端子の軸芯方向と直交する方向に応力が加わり、そのため、外部接続端子が根元付近で折曲することがある。したがって、本来、平行に導出すべき一对の外部接続端子g、gの端末の間隔が変り、面実装する時、修正しなければならず、修正しないと配線基板の導体部と正しく接続することができないという課題があった。

本考案は、従来のこのような課題を解決することをその目的としたものである。

【0004】

【課題を解決するための手段】

本考案は、上記の目的を達成するために、磁性コアに巻線を巻装したコイルを装着する盤体に外部接続端子を設け、該外部接続端子に前記巻線の端末を絡げて成る面実装コイル部品において、前記外部接続端子は、前記盤体の側面から導出された外部接続部と前記盤体から該外部接続部の付け根部分と略平行に導出され

た巻線端末絡げ部とから成り、該巻線端末絡げ部に前記巻線の端末を絡げ、該巻線絡げ部と前記外部接続部の付け根部分とを半田で一体にしたことを特徴とする。

【0005】

【作用】

外部接続端子の外部接続部と巻線端末絡げ部はいずれも盤体から別個に導出されるので、巻線の端末を引っ張りながら前記絡げ部に絡げてこれに応力が加わり、絡げ部が曲がってとしても、外部接続部には何等応力が加わらないので曲ることがない。そして、外部接続部の付け根部分と絡げ部とは半田で一体になるので、外部接続部の付け根部分の機械的強度が増して曲りにくく、一对の外部接続端子を並設した場合には、一对の外部接続端子の間隔が変動しにくくなる。

【0006】

【実施例】

以下本考案の実施例を図面につき説明する。

図1はコモンモードチョークコイルに適用された本考案の一実施例を示す。同図において、1は環状磁性コア2に一对の巻線3、3を巻装したコモンモードチョークコイルで、これは、図2に明示するような絶縁性盤体4に配置される。該盤体4は、直方体をなし、その上面に円形の収納孔5が形成され、その中央に環状磁性コア2の中央孔に嵌合する柱体6を有する。7は外部接続端子で、その一端近傍が盤体4に埋め込まれ、盤体4の上面の切欠部8から突出された一端は付け根から直角に折曲されて盤体4の上面と平行に導出されて巻線端末絡げ部9となっており、他端部は盤体4の側面から盤体4の上面と平行に絡げ部9より相当長く導出されて外部接続部10となっている。この外部接続端子7は、盤体4の対向する両側面にそれぞれ一对、平行に配設されている。

前記コモンモードチョークコイル1を盤体4の収納孔5に配置した後、図3に示すように、巻線端末11を巻線端末絡げ部9に絡げる。そしてこの絡げ部9と外部接続部10の付け根部分とを溶融半田に浸漬して半田12で一体にする。

【0007】

上記実施例では、外部接続端子7の外部接続部10を盤体4の側面から導出し

たので、面実装するために、外部接続部10は、その先端部が盤体4の底面から下側に位置するように折曲形成される。

【0008】

図4に示す実施例においては、外部接続端子7の外部接続部10は、盤体4の底面から突出して盤体4の上面と平行に導出されており、この構成によれば、外部接続部10を成形する必要がない。

【0009】

【考案の効果】

本考案は、上述のように構成されているので、巻線端末を引っ張りながら外部接続端子に絡げても外部接続端子は折曲することがなく、複数個並設されている場合にはその端子間隔が変わることがないという効果を有する。また絡げ部と外部接続部の付け根部分を半田で一体にしたため外部接続部は機械的強度が増し、折曲しにくくなる効果を有する。

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CLAIMS

[Utility model registration claim]

[Claim 1] An external end-connection child is prepared in **** equipped with the coil which looped the magnetic core around the coil, and it sets to the surface mounting coil component which tucks up the terminal of the aforementioned coil to this external end-connection child, and grows into him, and is the aforementioned external end-connection child. The surface mounting coil component by which it is making [tucked up from the external connection drawn from the side of the aforementioned ****, and the aforementioned **** in the end of a coil edge it was drawn by the root portion of this external connection, and abbreviation parallel, consisted of the section, tucked up in this end of a coil edge, tucked up the terminal of the aforementioned coil in the section and / into one]-with solder-root portions of this coil ***** and aforementioned external connection characterized.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed explanation of a design]

[0001]

[Industrial Application]

This design is related with a surface mounting coil component like for example, a tipped type common mode choke coil.

[0002]

[Description of the Prior Art]

In the conventional surface mounting coil component, as shown in drawing 5 , to for example, the circular crevice b formed in the upper surface of **** a of a rectangular parallelepiped After inserting in the slot f which equips with the coil e with which the annular magnetism core c was looped around Coil d, and carries out opening of the terminal e of Coil d to the side from the aforementioned crevice b, Where the external end-connection child's g root implanted in the aforementioned side tucked up and Terminal e is pulled in Section h, it tucked up and tucked up, and even the section shell external end-connection child's g nose of cam was dipped in the melting solder i, and was tucked up, and the portion is soldered.

[0003]

[Problem(s) to be Solved by the Device]

In the conventional coil component, since it tucks up around the external end-connection child g where a coil terminal is pulled, stress may be added in an external end-connection child's direction of an axis, and the direction which intersects perpendicularly, therefore an external end-connection child may bend near a root. therefore -- if it must correct and does not correct, when the interval of the terminal of the external end-connection children g and g of the couple which should originally be drawn in parallel changes and carries out surface mounting -- the conductor of a wiring substrate -- the technical problem were not correctly connectable with the section occurred

This design sets it as the purpose to solve such a conventional technical problem.

[0004]

[Means for Solving the Problem]

In the surface mounting coil component which prepares an external end-connection child in **** which equips with the coil which looped the magnetic core around the coil in order that this design may attain the above-mentioned purpose, tucks up the terminal of the aforementioned coil to this external end-connection child, and grows into him The aforementioned external end-connection child tucks up from the external connection drawn from the side of the aforementioned ****, and the aforementioned **** in the end of a coil edge it was drawn by the root portion of this external connection, and abbreviation parallel, and consists of the section. It tucks up in this end of a coil edge, the terminal of the aforementioned coil is tucked up in the section, and it is characterized by making the root portions of this coil ***** and the aforementioned external connection into one with solder.

[0005]

[Function]

pulling the terminal of a coil, since it tucks up in an external end-connection child's external connection, and the end of a coil edge and each section is separately drawn from ****, it tucks up the account of before and tucks up in the section -- having -- stress -- being added -- tucking up -- the section -- bending -- ** -- since stress does not join an external connection at all even if it carries out, it does not bend And since it tucked up with the root portion of an external connection and the section was united with solder, when the mechanical strength of the root portion of an external connection increases, it is hard to bend and the external end-connection child of a couple is installed, the interval of the external end-connection child of a couple stops being able to change easily.

[0006]

[Example]

The example of this design is explained per drawing below.

Drawing 1 shows one example of this design applied to the common mode choke coil. In this drawing, 1 is the common mode choke coil which looped the annular magnetism core 2 around the coils 3 and 3 of a couple, and this is arranged at insulating **** 4 which is specified in drawing 2 . this **** 4 -- a rectangular parallelepiped -- receipt circular on nothing and its upper surface -- a hole 5 forms -- having -- the center -- the center of the annular magnetism core 2 -- it has the prism 6 which fits into a hole 7 is an external end-connection child, the end which it was embedded near

the end at **** 4, and was projected from the notch 8 of the upper surface of **** 4 is attached, is originally bent by the right angle, is drawn by the upper surface of **** 4, and parallel, is tucked up in the end of a coil edge, and serves as the section 9, and the other end is tucked up from the side of **** 4 to the upper surface of **** 4, and parallel, and it is drawn fairly for a long time This external end-connection child 7 is arranged in the both-sides side where **** 4 counters by a couple and parallel, respectively.

the aforementioned common mode choke coil 1 -- receipt of **** 4 -- after arranging to a hole 5, as shown in drawing 3, the coil terminal 11 is tucked up in the end of a coil edge, and it tucks up in the section 9 and -- this -- it tucks up, the root portions of the section 9 and the external connection 10 are dipped in melting solder, and it is made one with solder 12

[0007]

In the above-mentioned example, since the external end-connection child's 7 external connection 10 was derived from the side of **** 4, in order to carry out surface mounting, bending formation of the external connection 10 is carried out so that the point may be located in the bottom from the base of **** 4.

[0008]

In the example shown in drawing 4, the external end-connection child's 7 external connection 10 is projected from the base of **** 4, is drawn by the upper surface of **** 4, and parallel, and according to this composition, it does not need to fabricate the external connection 10.

[0009]

[Effect of the Device]

Even if it tucks up to an external end-connection child, pulling a coil terminal since this design is constituted as mentioned above, an external end-connection child has the effect that the terminal interval does not change, when it does not bend and is installed [two or more]. Moreover, it tucks up, the root portions of the section and an external connection are written to one with solder, and an external connection has the increase of a mechanical strength, and the effect it is hard coming to bend.

[Translation done.]

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----- DESCRIPTION OF DRAWINGS -----

[Brief Description of the Drawings]

[Drawing 1] Front view of one example of this design

[Drawing 2] The perspective diagram of the board soma of the above-mentioned example

[Drawing 3] Front view of the above-mentioned example before soldering

[Drawing 4] The perspective diagram of the board soma of other examples of this design

[Drawing 5] The perspective diagram of the conventional surface mounting coil component

[Description of Notations]

1 Common Mode Choke Coil 2 Annular Magnetism Core

3 Coil 4 Insulating ****

7 External End-Connection Child 9 It Tucks Up in the End of Coil Edge, and is Section.

10 External Connection 11 Coil Terminal

12 Solder

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CLAIMS

[Utility model registration claim]

[Claim 1] In the surface mounting coil component which prepares an external connection terminal in **** equipped with the coil which looped the magnetic core around the coil, tucks up the terminal of said coil for this external connection terminal, and grows into it said external connection terminal Tuck up in the end of a coil edge it was drawn by the root part of this external connection, and abbreviation parallel from the external connection drawn from the side face of said ****, and said ****, and it consists of the section. The surface mounting coil component by which it is making [tucked up in this end of a coil edge, tucked up the terminal of said coil in the section, and / into one]-with solder-root parts of this coil ***** and said external connection characterized.

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DETAILED DESCRIPTION

[Detailed explanation of a design]

[0001]

[Industrial Application]

This design is related with a surface mounting coil component like for example, a chip mold common mode choke coil.

[0002]

[Description of the Prior Art]

In the conventional surface mounting coil component, as shown in drawing 5, to for example, the circular crevice b formed in the top face of **** a of a rectangular parallelepiped After inserting in the slot f which equips with the coil e with which the annular magnetism core c was looped around Coil d, and carries out opening of the terminal e of Coil d to a side face from said crevice b, Where the root of the external connection terminal g implanted in said side face tucked up and Terminal e is pulled in Section h, it tucked up and tucked up, and from the section to the tip of the external connection terminal g was dipped in the melting solder i, and was tucked up, and the part is soldered.

[0003]

[Problem(s) to be Solved by the Device]

In the conventional coil component, since it tucks up around the external connection terminal g where a coil terminal is pulled, stress may be added in the direction of an axis of an external connection terminal, and the direction which intersects perpendicularly, therefore an external connection terminal may bend near a root. therefore -- if it must correct and does not correct, when spacing of the terminal of the external connection terminals g and g of the pair which should be drawn in parallel essentially changes and carries out surface mounting -- the conductor of a wiring substrate -- the technical problem were not correctly connectable with the section occurred.

This design sets it as the purpose to solve such a conventional technical problem.

[0004]

[Means for Solving the Problem]

In the surface mounting coil component which prepares an external connection terminal in **** which equips with the coil which looped the magnetic core around the coil in order that this design may attain the above-mentioned purpose, tucks up the terminal of said coil for this external connection terminal, and grows into it Tuck up said external connection terminal in the end of a coil edge it was drawn by the root part of this external connection, and abbreviation parallel from the external connection drawn from the side face of said ****, and said ****, and it consists of the section. It tucks up in this end of a coil edge, the terminal of said coil is tucked up in the section, and it is characterized by making the root parts of this coil ***** and said external connection into one with solder.

[0005]

[Function]

since it tucks up in the external connection of an external connection terminal, and the end of a coil edge and each section is separately drawn from ****, while pulling the terminal of a coil -- said -- it tucks up and tucks up in the section -- having -- stress -- being added -- tucking up -- the section -- bending -- ** -- even if it carries out, since stress does not join an external connection at all, it does not bend And since it tucks up with the root part of an external connection and the section is united with solder, when the mechanical strength of the root part of an external connection increases, it is hard to bend and the external connection terminal of a pair is installed, spacing of the external connection terminal of a pair stops being able to change easily.

[0006]

[Example]

The example of this design is explained per drawing below.

Drawing 1 shows one example of this design applied to the common mode choke coil. In this drawing, 1 is the common mode choke coil which looped the annular magnetism core 2 around the coils 3 and 3 of a pair, and this is arranged at insulating **** 4 which is specified in drawing 2.

The circular receipt hole 5 is formed in nothing and its top face in a rectangular parallelepiped, and this **** 4 has the prism 6 which fits in in the center at the central hole of the annular magnetism core 2. 7 is an external connection terminal, the end which it was embedded near [the] the end at **** 4, and was projected from the notch 8 of the top face of **** 4 is attached, is originally bent by the right angle, is drawn by the top face of **** 4, and parallel, is tucked up in the end of a coil edge, and serves as the section 9, and the other end is tucked up from the side face of **** 4 to the top face of **** 4, and parallel, and it is drawn fairly for a long time, and has become the external connection 10 from the section 9 This external connection terminal 7 is arranged in the both-sides side where **** 4 counters by a pair and parallel, respectively.

After arranging said common mode choke coil 1 to the receipt hole 5 of **** 4, as shown in drawing 3, the coil terminal 11 is tucked up in the end of a coil edge, and it tucks up in the section 9. and -- this -- it tucks up, the root parts of the section 9 and the external connection 10 are dipped in melting solder, and it is made one with solder 12.
[0007]

In the above-mentioned example, since the external connection 10 of the external connection terminal 7 was drawn from the side face of **** 4, in order to carry out surface mounting, bending formation of the external connection 10 is carried out so that the point may be located in the bottom from the base of **** 4.

[0008]
In the example shown in drawing 4, the external connection 10 of the external connection terminal 7 is projected from the base of **** 4, is drawn by the top face of **** 4, and parallel, and according to this configuration, it does not need to fabricate the external connection 10.

[0009]
[Effect of the Device]
Since this design is constituted as mentioned above, even if it tucks up for an external connection terminal, pulling a coil terminal, an external connection terminal has the effectiveness that the terminal spacing does not change, when it does not bend and is installed [two or more]. Moreover, it tucks up, the root parts of the section and an external connection are written to one with solder, and an external connection has the increase of a mechanical strength, and the effectiveness it is hard coming to bend.

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TECHNICAL FIELD

[Industrial Application]

This design is related with a surface mounting coil component like for example, a chip mold common mode choke coil.

[0002]

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PRIOR ART

[Description of the Prior Art]

In the conventional surface mounting coil component, as shown in drawing 5, for example, the circular crevice b formed in the top face of **** a of a rectangular parallelepiped. After inserting in the slot f which equips with the coil e with which the annular magnetism core c was looped around Coil d, and carries out opening of the terminal e of Coil d to a side face from said crevice b, Where the root of the external connection terminal g implanted in said side face tucked up and Terminal e is pulled in Section h, it tucked up and tucked up, and from the section to the tip of the external connection terminal g was dipped in the melting solder i, and was tucked up, and the part is soldered.

[0003]

[Translation done.]

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EFFECT OF THE INVENTION

[Effect of the Device]

Since this design is constituted as mentioned above, even if it tucks up for an external connection terminal, pulling a coil terminal, an external connection terminal has the effectiveness that the terminal spacing does not change, when it does not bend and is installed [two or more]. Moreover, it tucks up, the root parts of the section and an external connection are written to one with solder, and an external connection has the increase of a mechanical strength, and the effectiveness it is hard coming to bend.

[Translation done.]

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Device]

In the conventional coil component, since it tucks up around the external connection terminal g where a coil terminal is pulled, stress may be added in the direction of an axis of an external connection terminal, and the direction which intersects perpendicularly, therefore an external connection terminal may bend near a root. therefore -- if it must correct and does not correct, when spacing of the terminal of the external connection terminals g and g of the pair which should be drawn in parallel essentially changes and carries out surface mounting -- the conductor of a wiring substrate -- the technical problem were not correctly connectable with the section occurred.

This design sets it as the purpose to solve such a conventional technical problem.

[0004]

[Translation done.]

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MEANS

[Means for Solving the Problem]

In the surface mounting coil component which prepares an external connection terminal in **** which equips with the coil which looped the magnetic core around the coil in order that this design may attain the above-mentioned purpose, tucks up the terminal of said coil for this external connection terminal, and grows into it Tuck up said external connection terminal in the end of a coil edge it was drawn by the root part of this external connection, and abbreviation parallel from the external connection drawn from the side face of said ****, and said ****, and it consists of the section. It tucks up in this end of a coil edge, the terminal of said coil is tucked up in the section, and it is characterized by making the root parts of this coil ***** and said external connection into one with solder.

[0005]

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OPERATION

[Function]

since it tucks up in the external connection of an external connection terminal, and the end of a coil edge and each section is separately drawn from ****, while pulling the terminal of a coil -- said -- it tucks up and tucks up in the section -- having -- stress -- being added -- tucking up -- the section -- bending -- ** -- even if it carries out, since stress does not join an external connection at all, it does not bend And since it tucks up with the root part of an external connection and the section is united with solder, when the mechanical strength of the root part of an external connection increases, it is hard to bend and the external connection terminal of a pair is installed, spacing of the external connection terminal of a pair stops being able to change easily.

[0006]

[Translation done.]

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EXAMPLE

[Example]

The example of this design is explained per drawing below.

Drawing 1 shows one example of this design applied to the common mode choke coil. In this drawing, 1 is the common mode choke coil which looped the annular magnetism core 2 around the coils 3 and 3 of a pair, and this is arranged at insulating **** 4 which is specified in drawing 2.

The circular receipt hole 5 is formed in nothing and its top face in a rectangular parallelepiped, and this **** 4 has the prism 6 which fits in in the center at the central hole of the annular magnetism core 2. 7 is an external connection terminal, the end which it was embedded near [the] the end at **** 4, and was projected from the notch 8 of the top face of **** 4 is attached, is originally bent by the right angle, is drawn by the top face of **** 4, and parallel, is tucked up in the end of a coil edge, and serves as the section 9, and the other end is tucked up from the side face of **** 4 to the top face of **** 4, and parallel, and it is drawn fairly for a long time, and has become the external connection 10 from the section 9 This external connection terminal 7 is arranged in the both-sides side where **** 4 counters by a pair and parallel, respectively.

After arranging said common mode choke coil 1 to the receipt hole 5 of **** 4, as shown in drawing 3, the coil terminal 11 is tucked up in the end of a coil edge, and it tucks up in the section 9. and -- this -- it tucks up, the root parts of the section 9 and the external connection 10 are dipped in melting solder, and it is made one with solder 12.

[0007]

In the above-mentioned example, since the external connection 10 of the external connection terminal 7 was drawn from the side face of **** 4, in order to carry out surface mounting, bending formation of the external connection 10 is carried out so that the point may be located in the bottom from the base of **** 4.

[0008]

In the example shown in drawing 4, the external connection 10 of the external connection terminal 7 is projected from the base of **** 4, is drawn by the top face of **** 4, and parallel, and according to this configuration, it does not need to fabricate the external connection 10.

[0009]

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The front view of one example of this design

[Drawing 2] The perspective view of the board soma of the above-mentioned example

[Drawing 3] The front view of the above-mentioned example before soldering

[Drawing 4] The perspective view of the board soma of other examples of this design

[Drawing 5] The perspective view of the conventional surface mounting coil component

[Description of Notations]

1 Common Mode Choke Coil 2 Annular Magnetism Core

3 Coil 4 Insulating ****

7 External Connection Terminal 9 It Tucks Up in the End of Coil Edge, and is Section.

10 External Connection 11 Coil Terminal

12 Solder

[Translation done.]

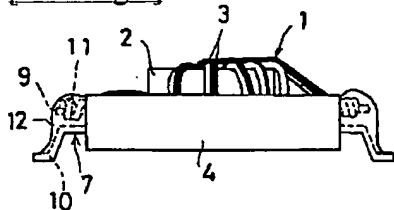
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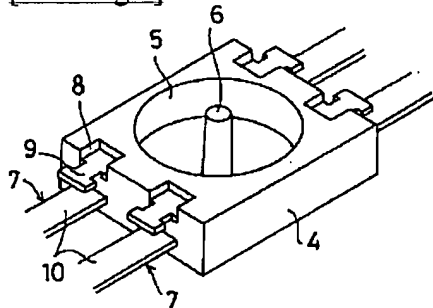
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DRAWINGS

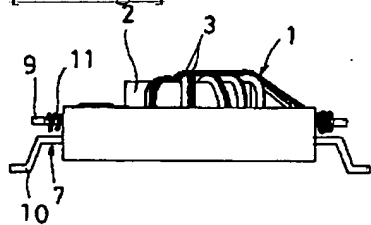
[Drawing 1]



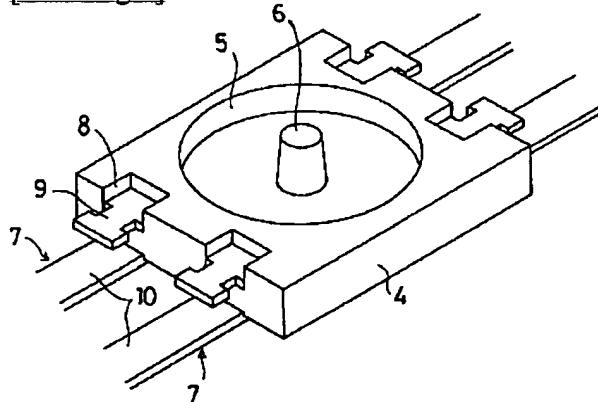
[Drawing 2]



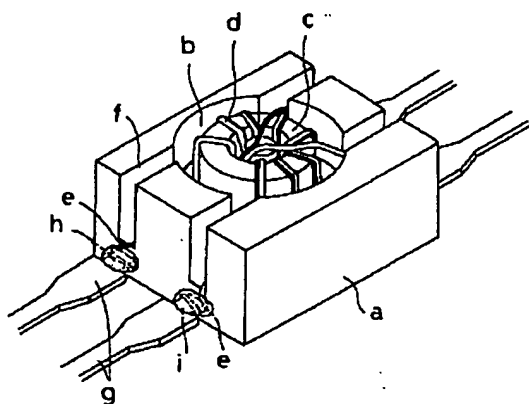
[Drawing 3]



[Drawing 4]



[Drawing 5]



[Translation done.]